

PRODUCE SAMPLING

Purpose This Meteorology and Air Quality Group (MAQ) procedure describes the methods of collection for produce (fruits, vegetables, and grains) samples.

Scope This procedure applies to the individual(s) assigned to collect produce as part of the Foodstuffs Monitoring Program.

**In this
Procedure**

Topic	See Page
General Information About This Procedure	2
Who Requires Training to This Procedure?	3
Worker Safety	4
Sample Collection	5
Chain-of-Custody for Samples	7
Records Resulting From This Procedure	8

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04/07/06

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General information about this procedure

Attachments This procedure has the following attachments:

Number	Attachment Title	No. of pages
1	Hazard Review	1
2	Chain-of-Custody Record	1

History of revision

This table lists the revision history and effective dates of this procedure.

Revision	Date	Description Of Changes
0	10/4/96	New document.
1	3/99	Reformatted in accordance with LIR300-00-01, Safe Work Practices.
2	4/01	Added new Section 9.0, Training.
3	4/02	Change in directorate.
4	4/03	Team name change to Environmental Surveillance.
5	5/12/04	Updated and reformatted document to conform with MAQ procedures.
6	04/11/05	Quick-change revision to convert HCP attachment to HR.
7	04/12/06	Quick-change revision to revise safety equipment requirements in HR.

Who requires training to this procedure?

The following personnel require training before implementing this procedure:

- MAQ personnel assigned to collect produce samples

Personnel previously trained to revision 5 of this procedure do not require re-training to this revision.

Training method

The training method for this procedure is **mentored** training by a previously-trained individual and is documented in accordance with the procedure for training (MAQ-024).

Annual retraining is required and will be by self-study (“reading”) training.

Prerequisites

In addition to training to this procedure, the following training is also required prior to performing this procedure:

- First Aid
- Cardiopulmonary Resuscitation (CPR)
- RRES-ES-Field, “General Field Safety for All Employees”

General information, continued

Definitions specific to this procedure

Foodstuffs: produce (fruits, vegetables, and grains), fish (surface feeders and bottom feeders), eggs, milk, brewed tea, honey, and game animals.

Produce: any fruit, vegetable, and/or grain that could be consumed directly from a garden or an orchard after simple washing.

References

The following documents are referenced in this procedure:

- MAQ-024, “Personnel Training”
 - MAQ-026, “Deficiency Reporting and Correcting”
 - RRES-ES-Field, “General Field Safety All Employees”
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Note

Actions specified within this procedure, unless preceded with “should” or “may,” are to be considered mandatory guidance (i.e., “shall”).

Worker Safety

Precautions and limitations

This document establishes the basic requirements for collecting produce samples. Work performed under this procedure by LANL personnel will occur only after required training to applicable documents has been completed and documented.

Safe work practices requirements

Project Personnel - A minimum of two people is required to go out in the field.

Personal Protective Equipment - For produce sampling, the following personal protective equipment must be worn: safety glasses, safety/field shoes, Kevlar safety gloves, and a hat.

Do not perform work under conditions you consider unsafe. Before beginning work described in this procedure, review safety needs and requirements, identify hazards, and develop hazard mitigation measures.

Sample Collection

- Sample types** Three types of produce are collected:
- fruits: apricots, apples, crabapples, peaches, pears, plums, melons, cherries, etc.
 - vegetables: chile, sweet corn, cucumbers, lettuce, pumpkins, squash, tomatoes, etc.
 - grain: corn, wheat, oats, etc.

- Sample locations** Samples of produce are collected from three areas:
- On-site: Includes sites on Laboratory property.
 - Perimeter: Includes Los Alamos townsite, White Rock/ Pajarito Acres, San Ildefonso, and Cochiti.
 - Regional background: Includes the Española Valley (from Pojoaque to Velarde), Santa Fe, and Jemez.

Number of samples The following table indicates the number of composite samples that should be collected from each area.

Note: This table is a guide for the ideal distribution of samples. Because of many factors that are beyond the control of gardeners and farmers, especially weather, it may not be possible to adhere to this distribution every year.

	On-site Lab	Los Alamos	White Rock/ Pajarito Acres	Española Valley
Vegetables	—	2	2	1
Fruits	5	2	2	1
Grains	—	2	2	1
	Santa Fe	Jemez	San Ildefonso	Cochiti
Vegetables	1	1	2	2
Fruits	1	1	2	2

Sample Collection, continued

Equipment needed

Additional specific equipment required for going into the field is given in the procedure RRES-ES-Field, “General Field Safety for All Employees”.

The following equipment is required for produce sampling:

- rubber gloves
- sharp knife
- Leather or Kevlar safety gloves, depending on tools to be used
- garden clippers
- zip-lock bags (gallon size)
- marker for labeling bags
- ice chest with ice
- chain-of-custody forms (Attachment 2)

Before leaving for the field

Identify a point-of-contact (providing pertinent information of destination, expected time-in, and how to notify field team). Notify group office to place you on travel status if leaving Los Alamos County. Check condition of vehicle and the fuel level. Ensure that you have a working cell phone and a pager.

Steps for sampling produce

When produce to be sampled is ripe (between July and September), plan trips to each sampling location and perform the following steps:

Step	Action
1	Travel to the sampling location and obtain permission from the garden owner to collect produce. It is best if you can collect the samples directly from the garden.
2	Collect approximately three pounds of produce and place into a zip-lock bag. Collect produce as if you were harvesting for human consumption. Label the bag with the sample location, date, time, and your initials.
3	Place the bags in the cooler with ice for transport back to the laboratory.
4	Complete a chain-of-custody form (Attachment 2) with the appropriate sampling information. Maintain applicable chain-of-custody procedures for samples until submitted to an analytical laboratory for analysis. See chapter <i>Chain-of-custody for samples</i> .
5	Once at the lab, store the samples on ice or in a freezer until they are processed (normally within two working days). Follow preparation and processing methods described in MAQ-706 (<i>Processing and Submitting Samples</i>).

Chain-of-custody for samples

Maintaining custody of samples

A sample is physical evidence collected from a facility or the environment. Chain-of-custody must be documented for all samples used to demonstrate compliance. Verify that the possession and handling of samples is traceable at all times. A sample is considered in custody if it is one of the following:

- In one's physical possession.
- In one's view after being in one's physical possession.
- In one's physical possession and then locked up so that no one can tamper with it.
- Kept in a secure area where access is restricted to authorized and accountable personnel only.

NOTE: A secured area is an area that is locked, such as a room, cooler, vehicle, or refrigerator. If the area cannot be secured by locking, use a custody seal to secure the area or the sample container.

Transferring custody of samples

Whenever samples are transferred into the custody of another person or organization, complete the "relinquished by/received by," "date," and "time" sections of the form (Attachment 2). These sections of the form must provide a complete history of custody of the samples from collection to transfer to the analytical laboratory.

If chain-of-custody is broken

Whenever there is a break in the chain of custody of a sample, document the failure by initiating a deficiency report in accordance with the procedure for deficiencies (MAQ-026). [The deficiency process will document the occurrence, evaluate the potential impact (if any) on the samples, and propose a fix to prevent recurrence.]

Records resulting from this procedure

Records

The following records generated as a result of this procedure are to be submitted **within one year** as records to the records coordinator:

- Chain-of-custody record

HAZARD REVIEW FOR PRODUCE SAMPLING

Work tasks/Steps	Hazards, Concerns, and Potential accidents; Likelihood/ Severity	Controls, Preventive Measures (<i>e.g.</i> , <i>safety equipment, administrative controls,</i> <i>etc.</i>)	Hazard Level from IMP 300-00-00 Hazard Grading Matrix
Travel to sampling sites in the field	Various field and outdoor hazards such as seasonal heat and cold extremes, wind, sun exposure, lightning, insects, reptiles, slips, falls, brush remote/moderate = low	Train to RRES-ES-Field, "General Field Safety for all Employees". Wear PPE that includes pants, long-sleeve shirt, safety glasses, field shoes, and gloves.	Low
Use knives and garden clippers as needed to collect produce samples according to steps for sample collection in the chapter "Sample Collection"	Cutting fingers, poking eyes with vegetation cutting shears Occasional /moderate = low	Use care when cutting and wear protective (<i>e.g.</i> , leather or Kevlar, depending on job) gloves.	Low

Wastes or residual materials

Sample materials will be disposed by analytical laboratory.

Emergency actions to take in event of control failure

For cuts, perform First Aid as appropriate. Go to hospital for serious injuries. Go to HSR-2 for evaluation. Notify supervisor ASAP.

Environmental Surveillance Team Chain-of-Custody Record

This form is from MAQ-701

Project Contact _____ Contact Phone No. _____ MS _____	Project Name Produce Sampling _____ _____	Account Code _____ Cost Center _____ Program Code _____
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Date Collected	Time Collected	Station Name/Number	Number of Samples	Analysis Requested	Remarks

Relinquished by (print and sign)	Date	Relinquished by (print and sign)	Date	Relinquished by (print and sign)	Date
	Time		Time		Time
Received by (print and sign)	Date	Received by (print and sign)	Date	Received by (print and sign)	Date
	Time		Time		Time

Samplers (print names and initial) _____

Comments

